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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/588,788	06/06/2000	Heng-Ming Hsu	67,200-262	9280

7590 11/19/2002
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EXAMINER

TUGBANG, ANTHONY D

ART UNIT	PAPER NUMBER
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3729

DATE MAILED: 11/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

S.M.

Office Action Summary

Application No.

09/588,788

Applicant(s)

HSU ET AL

Examiner

Dexter Tugbang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicants' amendment filed on 1/23/02 (Paper No. 8) has been fully considered and made of record.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: A Method of Fabricating a Planar Spiral Inductor Structure Having an Enhanced Q Value.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Esper et al 4,613,843.

Esper discloses a method of fabricating an inductor comprising: providing a ceramic substrate (see col. 43, line 45); forming over the substrate, a planar spiral conductor with a successive series of spirals (from top coil 91 and bottom coil 92) to form a planar spiral inductor

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with the planar spiral conductor layer being formed with a continuous variation of a series of linewidths of the successive series of spirals (shown in Fig. 6).

Regarding Claim 2, Esper teaches that forming the series of spirals provides an enhanced Q value, which is read as the signal level of inductance (see col. 2, lines 27-34).

Regarding Claim 3, the substrate of Esper is employed in an integrated circuit microelectronic fabrication, i.e. magnetic transducer in automotive applications (see col. 2, lines 4-6).

Regarding Claims 4 and 5, the spiral conductor layer of Esper is formed in the shape of a square (see Fig. 6) and from magnetic metal alloys of copper and chromium (see col. 3, lines 44+).

Regarding Claim 6, the series of linewidths is a progression from a first spiral (top coil 91), which defines the center of the planar spiral inductor having a narrow linewidth to a final spiral (bottom coil 92) having a wide linewidth as compared to the first spiral.

Regarding Claim 7, the examples of linewidths taught by Esper (at col. 4, lines 16-21) can be said to be about 7 microns or about 17 microns.

Regarding Claim 8, Esper shows (in Fig. 6) that there are about 3 spirals for the successive series of spirals (top coil 91 and bottom coil 92).

Response to Arguments

5. Applicant's arguments filed 1/23/02 (Paper No. 8) have been fully considered but they are not persuasive. In regards to the merits of Esper et al, applicants' contend that Esper does not

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teach the spiral conductor layer is formed with a continuous variation in the series of linewidths of the successive series of spirals.

The examiner most respectfully disagrees and points to Esper's Figure 6, which shows a planar spiral conductor with a successive series of spirals (top coil 91 and bottom coil 92). These successive series of spirals have a series of linewidths, which are continuous because each is connected by the interconnection 93 with no discontinuity or interruption between the spirals. Thus, Esper fully satisfies the limitations of "the spiral conductor layer is formed with a continuous variation in a series of linewidths of the successive series of spirals" (lines 4-6 of Claim 1). The phrase "continuous variation" as presented in the claim is a very broad and relative relationship of the spiral conductors and further limitations as to how the spiral conductor layer is formed with a "continuous variation" would need to be recited in order to distinguish the applicants' claimed invention over Esper et al.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The newly cited reference to Japanese Patent Publication JP 6-120035 is relied upon to show the general state of art spiral conductors.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

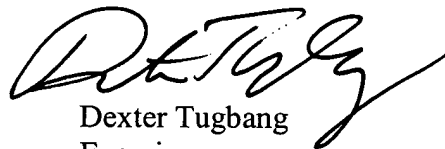
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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dexter Tugbang whose telephone number is 703-308-7599. The examiner can normally be reached on Monday - Friday 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 703-308-1789. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3590 for regular communications and 703-305-3588 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0858.


Dexter Tugbang
Examiner
Art Unit 3729

adt
November 10, 2002